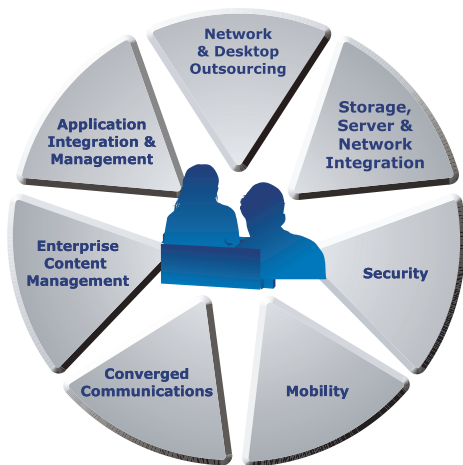


# Getronics en PinkRoccade in Nederland: twee sterke organisaties met een ruime staat van dienst hebben de krachten gebundeld. Vastbesloten om uw verwachtingen te overtreffen.

Twee bedrijven, die elkaar strategisch, commercieel en technologisch uitstekend aanvullen, zijn samengegaan. Twee bedrijven zijn Getronics PinkRoccade geworden. Een nieuwe combinatie die u nóg meer te bieden heeft. Meer kennis en ervaring, meer slagkracht, meer ambitie. Getronics PinkRoccade staat voor toegevoegde waarde, in de gehele dienstverlening. Met een schaalgrootte die de efficiency van onze dienstverlening waarborgt.

Noblesse oblige, als nummer één in ICT-dienstverlening in Nederland. De integratie van onze business portfolio's is in volle gang: de solutions van Getronics gecombineerd met de marktspecifieke oplossingen van PinkRoccade. Een integratie die u als klant, in het bedrijfsleven en in de overheid, snel de voordelen zal opleveren. In de tussentijd gaat de dienstverlening door: betrouwbaar en daadkrachtig. Nu en in de toekomst. We houden u op de hoogte van de ontwikkelingen!





RFID  
**The powerful little tag with a huge potential**

Whitepaper



## RFID

The powerful little tag with a huge potential

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## Preface

**Radio Frequency IDentification** (RFID) technology has been around since 1966; patented in 1973 it has been used in various ways ever since. However, its public breakthrough, rather than its technological one, is only now about to happen, with new business developments, policies and learning experiences, creating an exciting and stimulating environment for the new technology to grow. Now, more than ever, it has increased applicability due to developments in production, like functionality and costs of production; and its relevance within current business requirements, such as shorter product life cycles, demand oriented organisations and increased (safety) regulations.

RFID should not be thought of as an identification methodology to replace barcodes, but as an additional technology that complements the barcode. RFID allows the reading and writing of information on a tag, without the need of the object itself being in 'the line of sight'. So, in combination with existing technologies and their current application, RFID will add value and enhance systems, not replace the current applications completely. The real value is through looking critically at the architecture of primary processes and all supportive processes, and redefining new processes, removing activities that don't add value, and managing resources more effectively and efficiently.

RFID developments have enabled a huge amount of opportunities. RFID can enable organisations to synchronise with their environment - synchronising supply with demand; synchronising information across people, business-units, organisations and total chains; synchronising determined processes output with factual process output, etc.

There are numerous organisations worldwide gathering knowledge regarding the application of RFID and the implications on their modus operandi: many organisations already know that RFID will have a structurally changing impact on their perspectives on doing business. Looking at the RFID-pilots of Metro, Wal-Mart and Tesco, we know that more and more organisations are starting to work with the technology of

RFID, which gives us an indication that the movement regarding RFID is growing exponentially. The pilots starting now are real concrete movements to adapt to a new standard in doing business.

In this white paper, we would like to share Getronics' motive for explorative studies within the field of RFID: we want to help our customers to 'play their current game better' by exploring new RFID enabled opportunities and possibilities.



## Chapter 1: Context of RFID

To understand the developments related to RFID, and to get a clear view on what RFID can enable, we need to take a look at the context in which RFID is applied:

### Traceability

The need for immediate up-to-date information shared across supply chains is of high importance. There is a growing demand for detailed, product specific information in a real time perspective, combined with the need to track and trace products, processes and people across entire business operations. This will have a great influence on RFID demand, as RFID has the ability to provide organisations with detailed specific product level information across their total supply chains.

Regulations on food safety, such as the European General Food Law, and increased focus on process control covering HACCP & ISO standards and port safety regulations like ISPS, are examples of where extended product and process information needs to be collected to guarantee and meet quality and safety standards.

Traceability is becoming an increasingly important issue. The EU General Food Law defines that from 1 January 2005, tracking and tracing across the entire food chain needs to take place. This means that, in the case of a product recall, production details and product information, through every stage of production to the end user, are available from the source. Every organisation now has the responsibility to comply with this new EU law enforcing this principle in (consumer) food safety. The Dutch government has also added the directive of providing this information to the supplier and buyer of the goods within 4 hours of notice, although it is not clear if this will become an EU-wide directive.

### Responsiveness

Due to the constant redesign of products, processes and services influenced by changing customer preferences, and new technological developments and the demand driven orientation of organisations, product life cycles have the tendency to decrease. Swift responsiveness is needed in order for organisations to stay aligned with current business/market developments.

Organisations want to match capacity with demand as much as possible. Reducing overheads and labour-costs, and deleting products, processes and services that don't add value, is essential in order to allocate resources effectively.

Making the right decisions in accordance to the right circumstances, using the right information, can be enabled by an organisation with their IT architecture tuned at a responsive attitude. The faster information becomes available to the organisation, the faster a response can be applied: the usage of real-time information is made possible by RFID.

### Connectivity & Visibility

Collaborations across organisations are sources of improvement for those organisations. Since JIT-management enabled suppliers to collaborate with manufacturers, distributors and warehouses; a focus on continuous process improvement has been adopted by many organisations. The development of enterprise resources management by ERP-systems and the connection of ERP systems between organisations and across supply chains are equal steps in collaborative information sharing and decision making processes based on real and factual data.

Organisations that want to align processes and informational streams across their chains need to enable data to flow up and down the chain constantly. A level of integrated visibility gives organisations advance notice before minor bottlenecks cause major problems internally or externally, and errors can be corrected before they result in costly and time-consuming inefficiencies. Increased visibility also enables a business to respond faster and be more competitive.

RFID can be the link in addressing quick response changes within the business environment.

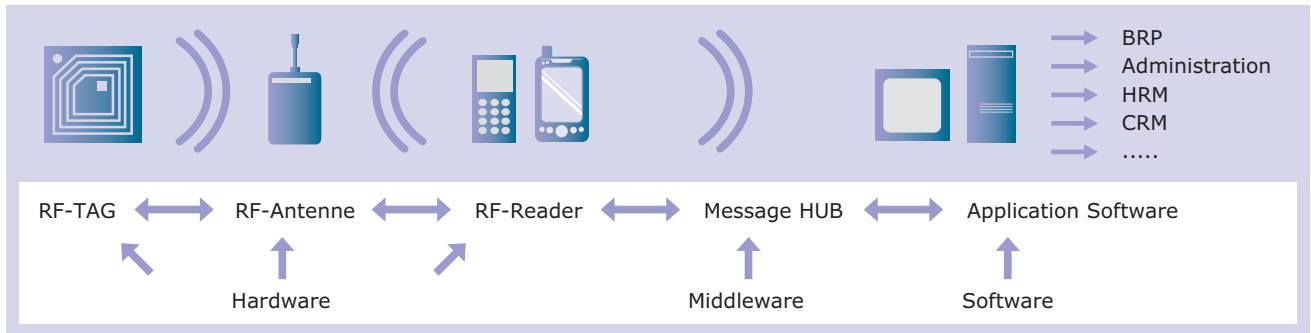


Figure 1: Basic RFID Setup.

## Chapter 2: What is RFID?

RFID is the use of radio frequencies to read/write information on a small device known as a 'tag'. RFID is used for any device that can be sensed at a distance by radio frequencies within a certain range. Tags can be in the form of labels, nails, microchips, and are even available as special ink to print on paper: they sometimes contain microchips.

RFID is a technology used for the automatic identification of goods, people and objects. This technology has already been applied in different areas: for example, in-store anti-theft devices, and the allocation of containers and materials within the Armed Forces; a remarkable application is the 1943 used on the 'Friend / Foe systems of the RAF'.

With technological development the capabilities are growing rapidly, the chips are continuously getting smaller and the cost of production reduces – all factors stimulating the usage of this technology.

There are two types of RFID tags: 'active' tags contain a battery, which provides the microchip with power and can send a signal independently to a reader; 'passive' tags do not have a battery and are powered indirectly via the electromagnetic waves from the reader.

RFID hardware consists of three basic elements: a tag or transponder, the antenna, and an RFID reading device. The reading device and the tag communicate via radio waves, which can be selected at different frequencies: i.e. high-frequency active tags can be used to allocate assets within a property; low-frequency passive tags can be used as an entrance identification method.

Differences in usage require different types of tags on different frequencies: i.e. an in store anti-theft devices would be a low cost passive tag; but the tracking and tracing of containers would be done by highly frequent active tags. RFID tags can provide and save information in different ways; read-write tags, read-only and Write Once-Read Many (WORM) tags, and usage in data-changes is closely related to the appliance of the tag and its purpose. See technical information below:

Tag Name	Fequency Hz	Reading Area Passive tags	Transfer rate	Influence of reading tags	
				Metal	Water / Moist
Low Frequency	125 - 134,2 kHz	< 1 meter	2-4 Kbit/s	Average	None
High Frequency	13,56 MHz	< 1,5 meter	10-20 Kbit/s	Average	None
Ultra-High Frequency	868 - 870 MHz	2-4 meter	20-150 Kbit/s	None	High
	902 - 928 MHz				
Micro-wave Frequency	2,45 GHz	~ 1 meter	> 100 Kbit/s	None	High

Taken and adapted from Samsys, Mircolise, Laran (VIL 2004; RF Tags voor intelligente logistiek)



Through reduced production costs and the increased relevancy of RFID technology, demand for RFID applications is increasing and thereby lowering the price of RFID tags. Prices for passive tags are currently between €0.20 and €1, dependent on order specifications. It is expected is that if demand rises to 30 billion of tags per year; prices could drop to a €0.05 a tag <sup>1)</sup>. Active tags start at around € 25 per tag for short range active tags, but this could go up to over €150 per tag when increased application areas and more advanced usage options are needed.

## Chapter 3: How is RFID Developing?

It is still difficult to assess all of the real added values of RFID usage, but an insight into the adaptation of the RFID technology and its applicability will help organisations understand how RFID could be used to help them. The technology hype cycle, developed by Gartner <sup>2)</sup> describes emerging technologies and their expected usage within organisations:

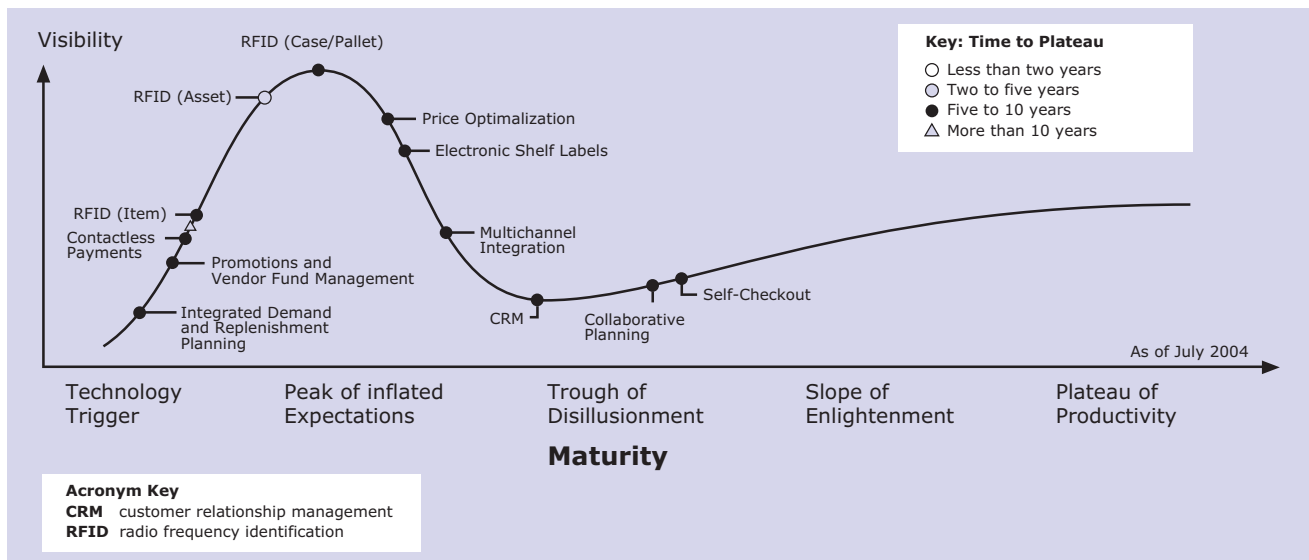


Figure 2: Gartner Hype Cycle.

### Developments within the Hype

#### Contactless Payment

With contactless payment, an amount of digital cash can be placed onto an RFID chip (like the Chipknip) inside a mobile phone, this cash can then be sent to any form of RFID compatible data communication: Nokia recently launched a mobile phone capable of making contactless payments. Contactless payment will not be fully adopted in less than 5–10 years, but it is wise to start gaining knowledge now by doing pilots and researching opportunities and possibilities. Ways of making small payments through contactless payment, i.e. e-ticketing and entrance management, and methods of information sharing through RFID are currently in development.

1) Stated in research done by the Auto-ID centre of MIT.

2) Hype Cycle Emerging Technologies, 2005. Gartner Group 2004.



### Tracking and Tracing of Items and Assets

Research by VIL indicates that within 4-5 years RFID will be used widely for the tracking and tracing of (transport) items. RFID tags will be placed on items circulating within a supply chain, allowing tracking of that item as it moves through the warehouse, and between one organisation and another. This will mean process improvements in relation to planning, demand forecasting and activity management: and, with an up-to-date overall insight over movements, resources can be better used, supplies better managed to demand, and lost assets minimised.

### Retail & SCM applications

As the Gartner hype shows, many opportunities related to RFID are applicable within retail or supply chain management, for example:

- Price optimising by more accurate market information on supply and demand for detailed locations (in-store), enabled by electronic shelf labels.
- Customer Relation Management (CRM), enabled by more detailed data collection on customer behaviour and preferences.
- Self-checkout in stores, enabled by the provision of payment data (credit/debit card information) placed on RFID tags.

Further SCM opportunities expected within the near future are: integrated demand and replenishment planning, multi channel integration and collaborative planning, and forecasting and replenishment.

The focus within supply management, more than in other sectors investigating RFID, is in integrating and distributing organisational knowledge and data chain-wide. Communications standards are become increasingly important here.

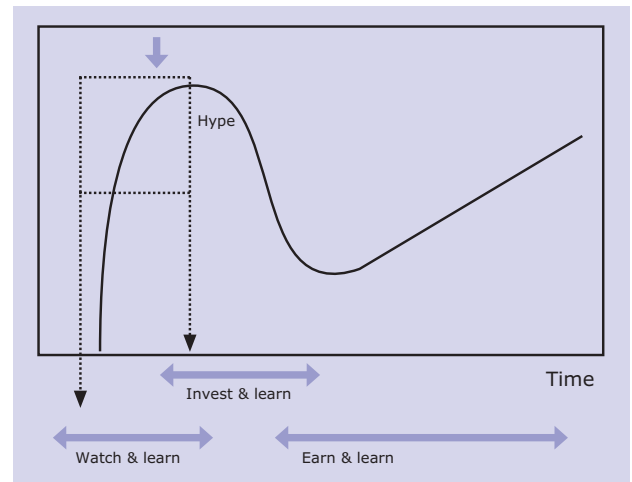


Figure 3: Getronics expectation: RFID at this stage in time

The hype cycle gives an indication of the stages of development for RFID - at this moment, it is being given a lot of attention, but there are still standardised communication and privacy issues to be overcome, and research still has to be done to establish the real added value of RFID.

Getronics feel that RFID is currently approaching the maximum of the hype and the technology is becoming mature. It means that at this stage of development you have to invest and learn, and actively gather information about the possible application of RFID within your organisation: it is the time to start explorative pilots in which the application of RFID is actively tested and studied. Learning now helps earning later!

### Tag Volumes Development

An ever increasing volume of tags will be sold globally, making the usage of RFID more acceptable ROI-wise and thus further stimulating the development of RFID. The development of accepted RFID standards will also stimulate tag volume sales.

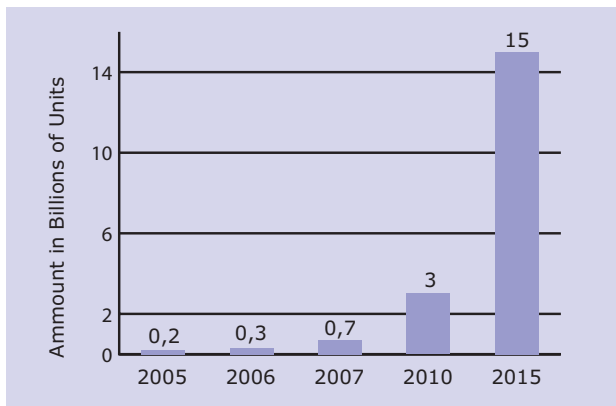


Figure 4: Industry Tag Sales.

### Standards

Globally, organisations are starting to promote RFID within their network. Organisations like Metro, Wal-Mart, Metro, and the Department of Defence, are creating a snowball effect within their chains of operations by creating a demand for the implementation of RFID within the operations of all their partners.

The quantity of organisations using RFID and doing explorative studies related to the field of RFID is growing, making it ever more important to create global standards covering overall RFID communications, enabling connections across chains, like the EDI-standards and EPC's Barcode Standard. Consensus has already been reached over the EPC GEN-2 Standard, also known as the 'Chicago-standards', covering ISO 180006-A, ISO 180006-B, EPC Class 0 and EPC Class 1.

Many companies face problems when they start pilots of full implementations. Getronics emphasise the learning curve that organisations will have to go through when working with RFID: the usage of RFID will have large impacts on process-architecture, ICT-architecture, and on responsibilities and tasks within organisations.

Currently, there are no assigned frequencies open for RFID, and there are still questions around security and privacy. The lack of a standard sharing protocol (like barcode EPC Standards) is still holding back many organisations who are considering investing in RFID: not knowing if suppliers and related organisations will adopt the same frequencies, type of tags, or communication language, is one of the main factors causing organisations to 'wait and see what happens'. Efforts by EPC (EAN Netherlands) are contributing to help solve these problems, although the solutions are not expected overnight.

All this prohibits the application of RFID from moving into a more mature stage, but none of these hurdles are insurmountable and actions taken by organisations such as EPC-Global, the Auto-ID Institute of MIT, and the current applications of RFID within organisations, are all contributing in gaining the insight to overcome them.



## Chapter 4: Business Applications

Much of the attention around RFID is focused on its applications within Retail and Supply Chain Management, mainly because of large scale projects which have been undertaken to explore the possible benefits of using RFID in this area. Within this white paper, Getronics would like to give some case examples of the usage of RFID in Industry (Ports), Processes (Healthcare) and People (Venue Management).

### Industry: Ports

The primary advantage of using RFID in a port/terminal application is that it can enable automatic data collection, i.e. operator intervention is not required. This means more accurate data collection, a better utilisation of employees' time, and a better use of organisational resources.

Application areas are:

#### Access Control

Access control is of growing concern for all organisations related to activities within ports; with the ever increasing importance of (port) security and the need for ports to comply with Smart & Secure Trade Lanes (SST) and Customs Containers Safety Initiative (CSI) regulations.

Personnel authorisation (knowing which people are allowed in selected areas, acting with what authority) is now a high priority issue. With RFID, such authorisations can be more easily managed: each person working within the ports is given an RFID card, and with this card he/she can be given access (or not) to certain areas, can be authorised to take certain actions, and allowed access to specific information (or not).

A similar system can be used for materials and actions control and authorisation, covering goods that are shipped into a port. Assessments in risks are more easily done by the speed by which RFID can enable data transfer: it also means that the visual check of containers is minimised.

#### Container security

One of the most important prerequisites for the success of RFID is an across-chain usage of RFID in a standardised manner, e.g. if the shipper and the port terminal work together, the true value of RFID can be enabled.

A big problem within ports and container handling is theft from containers: but if a shipper seals their containers with RFID tags, the moment a container is opened the RFID tags give a signal which tell the closest reader that the seal is broken and the container has been opened. Through location management enabled by RFID, the handling organisation immediately knows the exact location and what the container contains, and with this data, the port authority can immediately take responsive action, and the total supply chain can be informed.

Other options in container security are: managing environmental changes (changes in temperature, weight and location); and automatic container ID and locations management (currently partially done visually).

#### Activity Tracking (Activity Based Costing)

When using RFID as an activity tracking device, an Activity Based Costing system can be enabled. Through allocating movements, handlings and process activities direct to a certain party, process actions can be recorded in time, personnel and resources used, which enables direct insight into process costs, efficiency and effectiveness per process / person / cargo.

A point to note is the fact that almost all containers are in an intermodal programme: this means that different parties within the (supply) chain make use of these containers. Working with a standardised pattern and with systems that can handle a variety of frequencies and codes, will be an essential aim if RFID is to live up to its full potential.

#### People: Venue Management

Research done for a large events organiser and facilitator indicates that visiting people and visiting organisations have a need for first class qualitative events.



Organising venues is about people (visitors) meeting other people (merchants), and trying to facilitate the process of matchmaking, and Events Managers need to work out how trade fairs and events can be personalised.

People tend to accept technology changes if they can benefit from them, i.e. it's cheaper, easier or offers more value: RFID can help Venue Management in several ways:

#### **Visitors point of view**

From a website with all information available, visitors can plan their visit to the venue, then they can lock their preferences - so far, nothing new. With RFID technology, the venue could then send them an RFID enabled ticket that facilitates their visit, and makes it possible to identify the visitor at the venue, using their stored preferences: for example, visitors can have parking access, leave their (digital) business card with merchants they're interested in, or even pay for sandwiches at the venue with the "digital purse" on their RFID enabled ticket. All personalised visit information, based on individual preferences, can be stored at registration and during the venue visit.

Other options that can be enabled by RFID are:

- Management of appointments (registration, who to speak with and when)
- People to meet by active routing (matching appointments with route planning)
- Easy digital information gathering

#### **Merchants point of view**

A merchant can easily identify interested visitors and organise follow-up meetings using RFID. Awareness and interest are often created at a venue, but the next step is doing the actual business, therefore the merchant wants to know as much as possible about his visitors to take away with him, which RFID tickets can enable. The merchant can also alter his 'sales wrap' on the spot depending on the visitor, e.g. their profile with preferences, other merchants visited previously, etc.

Knowing how visitors flow through facilities can be most effective. Detailed visitor figures are available constantly, so a merchant can see exactly how many

visits are being made to his stand, and can even keep an eye on individual (employee) performance at the venue, i.e. the number of people spoken to per hour, amount of contacts registered, actual sales, etc.

#### **Venue point of view**

A venue organisation can gather information about their primary core processes - not to identify individual movements, but to gather and analyse customer movement in general: i.e. how many visitors are at the event at different times, what is average visit length, which merchants are visited more frequently, how do people move around the various venue areas, where do the crowds occur?

By gathering this information, actual performance can be managed and revised, and simulations on how to manage visitor flow can be more effectively enabled. The most popular locations and the most used routes can be identified, registration procedures can be shortened (auto entrance by RFID), and even parking made easier, i.e. payment in advance, combining entrance and a parking space by RFID, etc.

#### **Processes: Healthcare**

Research from Frost & Sullivan indicates that streamlining processes within healthcare is one of the best enablers of being able to handle higher volumes of patients; which helps to solve healthcare's most talked about issue - shortening waiting lists. RFID can also help to minimise administrative costs, e.g. deleting manual data entry by transferring data through RFID. It creates more space within resources; allowing the focus to be on value added activities and handling larger volumes of patients with a better quality of service.

RFID can provide hospitals with more efficient process-architecture. Through RFID data, managers can be provided with management information (Key Performance Indicators, Critical Success Factors) and take relevant actions. The benefits of the increased provision of accurate and up-to-date process data to management is shown in complex event processing, where process data is being used to analyse process patterns and its outcome: here, bottlenecks in processes can be identified and the (logistical) process



of a patient, materials, assets and employees, can be tracked and registered.

Areas of improvement that can be enabled through RFID are:

#### **Efficiency & effectiveness**

Within current processes, it is hard to measure (cost) efficiency and effectiveness. Currently, measurements are largely done by surveys, process mapping, or other (manual) methods; but with RFID, this information can be captured and distributed automatically. By providing RFID tags to patients, locations, assets and offices, simple registrations can identify how many visitors a doctor handles in a day (matching supply and demand), how many minutes patients wait between entrance and appointment/appointments (minimising waiting times), how patients flow through facilities (providing information for optimising routing), and where and in which frequency assets are used. These registrations form the basis for automatic data capturing for operational reports (total minutes of waiting time/ doctor, flow simulation) and based on that information, better decision making can take place, areas of improvement can be identified, and processes can be streamlined.

#### **Better throughput-management**

Similarly, a better orientation on throughput management can be supported. By giving direct insight into the (basic) processes patients go through (entrance, registration, actual appointment, leaving), detailed information can be gathered (per patient, per service, per doctor, per location, etc.) to analyse and review the current process architecture responsible for throughput. Simulations of other options can then be undertaken to increase throughput, for instance, minimising the time between entrance and actual appointment (shorter routing, minimising waiting times and planning sequence of appointments).

#### **Better patient oriented processes**

By registering patient flow through facilities, insight can be gained regarding optimal routing and how the architecture of processes can be better adapted to actual patient wants and needs, and patient behaviour: e.g. the orientation of relationships between processes, grouping of locations which have a high frequency of combined visits (to minimise walking distances, waiting time), and improving satisfaction by gathering personal information about patient preferences on medication, usage and experiences.



## Chapter 5: Handling RFID Data

When organisations enable themselves to work with real time data, their IT systems will also have to do so accordingly. Research has made clear that RFID has the potential to produce 30 times more data than companies handle today <sup>3)</sup>. To ensure that this data does not overwhelm current systems, and that the correct data is linked and distributed to current enterprise systems used for smarter, better and faster performance; companies should leverage several other IT components. This means that, with the revision of current business processes, the current IT infrastructure has to be revised as well.

The added value of using RFID is that more detailed and up-to-date information is available, but, the underlying assumption is that this information knows where to go and how to go there and that it can actually go there. Without a management information system, just raw (RFID) data is collected, but not analysed or dispersed, which is not beneficial. Organisations need to use RFID to aid actionable intelligence: input from RFID data needs to enable direct response and (automatic) follow up processes; organisations need to facilitate an increased dependency on an up-to-date information system on which decision making processes are based.

From the perspective of IT, one of the most important things related to RFID is the distribution of data between people, locations, organisations and enterprise systems, but this added value is hard to obtain without open systems,

freely communicating to and with each other. A solid IT foundation is thereby one of the foremost prerequisites that will enable organisations to realise defined benefits from the new data collection.

Before organisations can benefit from the knowledge and responsiveness RFID enables, it is necessary to consider how to integrate RFID with current enterprise systems. The maturity of the technology, the standards guiding deployment, and RFID adoption patterns, are all important factors in defining the need to integrate RFID software with enterprise systems <sup>4)</sup>.

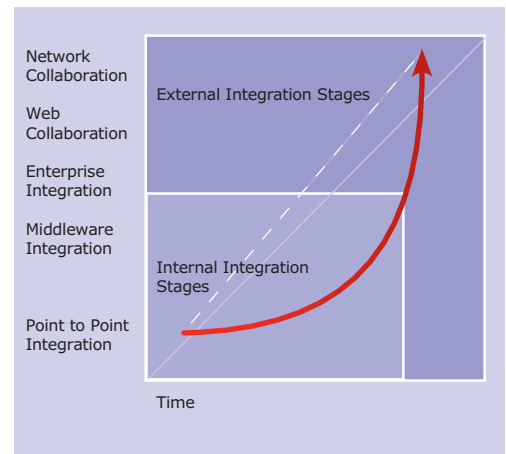
One of the enablers of open systems is middleware: this is the software that has to be built in to the organisational IT architecture to enable the distribution of data gathered by the RFID readers into the enterprise systems of the organisation.

Investments made in RFID now, must also look to the future. The development of RFID within the coming years will require flexibility and adaptability beyond the pilots and implementations done now, because of standards being developed, and compatibility with enterprise systems and standard communication formats. In order to make an investment within RFID worthwhile, these aspects have to be taken into account to prevent further large investments due to incompatibility issues in the future.

3) Radio Frequency Identification: Moving beyond the hype to maximum value - Unisys White Paper on RFID

4) Based on Research by Noblestar Confidential

Integration	Foucs	Trough	Application
Applications	Internal	Point to Point connectivity	Basic Process Data Management Information Internal Integration
Enterprise System	Internal	Middleware Gateway	Management Information Internal Integration
Connectivity between Enterprise Systems	External	Web Services	Management Information External Integration Micro / Meso Economic Information sharing
Shared Enterprise Systems	External	EPC Network Collaborations	External Integration Micro / Meso Economic Information sharing





## Chapter 6: Starting with RFID

Getronics recommends organisations to start taking their first steps with RFID now. As already described, the development of RFID is mainly in its invest and learn phase, which means that organisations need to start to get insight into the opportunities and possibilities that RFID can offer, and to learn how this technology will influence their business. Gathering knowledge is not expensive and can be of enormous value.

### Open discussion events

At an open discussion event, the initial motivation to start an RFID project should be identified. Creating awareness of what RFID can mean for your organisation should be done in a realistic way, within the capabilities of the current RFID solutions available. Managing expectations around the performance RFID can enable should keep the project at a manageable and reachable stage. The discussion should include people from across the total organisation, because looking at a problem from different perspectives can create a platform where a shared solution can be found. Watch what other companies do, benefit from their lessons learned, and look for case studies to identify and discuss opportunities and possibilities within your organisation.

### Research possibilities and opportunities

When problems areas are targeted, every organisation operates differently and has unique opportunities to improve performance. Every organisation must decide where RFID will provide the most benefit by identifying the areas that will be most improved by the technology. Using known case studies, pinpointing bottlenecks, and brainstorming for possible solutions, will help to identify an initial objective and a desirable result.

### Make a choice!

To test RFID, organisations should pick a problem area or process within the organisational internal operations that does not require large systems integration. This means that it can be worked on within a short timescale and with relatively limited resources. The project should focus on actively learning how RFID is working within their specific environment and on getting people involved.

### Identify foreseeable problem areas

When plotting a plan for the pilot, foreseeable problem areas should be identified, together with scenario plans in case some parts do not function as planned. Creating a back-up ensures that the learning experience and the total project are not held-up until a problem is solved.

### Start a Pilot

The pilot will enable organisations to understand the technology's capabilities and limitations, and help the entire organisation (not just a single individual) understand how RFID will operate within its environment and how it will interact with current processes. Employee reactions and experiences with the technology are also very important within this phase, and managing expectations on the capabilities of RFID prevents later disappointments. Experimenting will inevitably lead to discovery: once an enterprise begins working with the technology it can see how RFID could improve multiple areas, which can be explored later in future pilots.

### Develop a business case

If an organisation wants to incorporate new technologies, or modify current processes, procedures or practices, it should have a business case that defines the strategic and tactical reasons for the change. This business case should include quantitative and qualitative measurement sets, to evaluate stated objectives and define the effects of implementation. Getronics cannot state it enough: don't forget the business case - it can save you real money! Don't enter into agreements with partners which cost you lots of money, without a focus on earning it back.

### Define a migration road map

With the roadmap defined, actions need to be taken to migrate from the current situation to the desired situation. Planning of the required inputs from various resources and communication about the migration are important issues. The roadmap can also provide a long term development map, with identified operational (pilot) steps, tactical steps for the near future, and the long term strategic goal which RFID can help you reach.



## Chapter 7: What can you expect from Getronics?

### Getronics' perspective on RFID

RFID is already part of our daily lives, but it will inevitably become more and more implemented, beyond the point we cannot imagine the way we lived without it; and RFID will soon overcome all the current pitfalls about standardisation, about costs, and about privacy issues.

Getronics believes now is the time to start thinking about adapting this technology and determining how and where to use it. With all new technologies, seeing the actual benefit is not easily done by reading a book or an article; it's done by really looking into it, taking steps, and making choices.

Getronics recommends that a good way to progress is to set up a pilot. Together, with our customers, Getronics can identify possible areas in which RFID might be useful. We then jointly develop a business case, specifying upfront what we expect from implementing RFID; by doing this, expectations are set before costs are incurred and invested money is put in the right place. With a clear business case, and through setting up pilots and experiencing the technology, an organisation can determine whether to move on and implement RFID for their whole organisation.

### Getronics' Services on RFID

Currently, Getronics is working on business cases in logistics, venue management, healthcare, and asset management. Getronics is also a partner for MediaPlaza and RFID Platform Nederland.

Here is an insight into some of the services we expect to be delivering more and more over the next few years:

#### Design and installation of RFID infrastructure:

- making informed decisions about tags, readers, antennas, etc.
- realising connections on a network, both mobile (WIFI) or fixed
- installation, together with other components like pc's, cables, applications

#### Manage and maintain:

- asset management, keeping track of all components
- maintaining assets, break and fix, responding to technology changes

#### Business consultancy and application development:

- developing business cases with customers
- designing applications
- developing and manage applications
- integrating systems and implementing middleware

#### Involve our global portfolio of solutions:

- **Security** - giving extra possibilities for identification, authorisation and authentication
- **Storage** - realising storage of additional data collections
- **Networks** - realising mobile and fixed infrastructure
- **Business intelligence** - handling 'smart' data instead of collecting large amounts of unnecessary data
- **Application integration** - developing business applications and integrating information technology
- **Asset management** - enabling the management of desktops and other equipment more efficiently



## About Getronics

With approximately 22,000 employees in over 30 countries and ongoing revenues of EUR 2.4 billion, Getronics is one of the world's leading providers of vendor independent Information and Communication Technology (ICT) solutions and services. Getronics today combines the capabilities of the original Dutch company with those of Wang Global, acquired in 1999, and of the systems and services division of Olivetti. Getronics designs, integrates, and manages ICT infrastructures and business solutions for many of the world's largest global and local companies and organisations, helping them maximise the value of their information technology investments. Getronics' headquarters are in Amsterdam, with regional offices in Boston and Singapore. Getronics' shares are traded on Euronext Amsterdam ('GTN').

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